

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**  
**BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Appellant: Yaacov Almog  
Serial Number: 10/763,625  
Filing Date: January 22, 2004  
Confirmation No.: 7724  
Examiner/Group Art Unit: Lawrence D. Ferguson/1794  
Title: COATING SYSTEM FOR SUBSTRATES

**APPEAL BRIEF**

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I. REAL PARTY IN INTEREST

The real party in interest is Assignee, Hewlett-Packard Development Company, L.P., a limited partnership established under the laws of the State of Texas and having a principal place of business at 11445 Compaq Center Drive W., Houston, Texas 77070, U.S.A. (hereinafter "HPDC"). HPDC is a Texas limited partnership and is a wholly-owned affiliate of Hewlett-Packard Company, a Delaware Corporation, headquartered in Palo Alto, CA. The general or managing partner of HPDC is HPQ Holdings, LLC.

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**II. RELATED APPEALS AND INTERFERENCES**

Appellant and the undersigned attorney are not aware of any appeals or any interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

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III. STATUS OF CLAIMS

Claims 38, 40-43, and 45-47 are the claims on appeal. See, Appendix.

Claims 1-37, 39, 44, 49, and 50 were canceled.

Claims 48 and 51-58 were withdrawn.

Claims 38, 40-43, and 45-47 are rejected.

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**IV. STATUS OF AMENDMENTS**

In response to the Final Office Action of November 16, 2009, no amendment pursuant to 37 C.F.R. § 1.116 was filed.

**V. SUMMARY OF CLAIMED SUBJECT MATTER**

In this summary of claimed subject matter, all citations are to the specification of United States Patent Application 10/763,625. Further, all citations are illustrative, and support for the cited element may be found elsewhere in the specification.

**Independent claim 38:**

Independent claim 38 is directed to a coated paper substrate configured for printing a toner image thereon. The coated paper substrate includes: a paper substrate (see page 3, lines 10-12 of Appellant's application as filed); an underlayer coating, applied directly on the substrate, wherein the underlayer coating contains amine terminated polyamide (see page 3, lines 25-27; page 6, lines 31-32; and page 7, lines 1-7 of Appellant's application as filed); and an overlayer coating, applied directly on the underlayer coating, comprising a polymer material to which the toner image can be fused and fixed (see page 3, lines 28-29 of Appellant's application as filed).

**Independent claim 43:**

Independent claim 43 is directed to a paper-based print media for printing a toner image thereon. The paper-based print media includes: a paper substrate coated with an underlayer having a high affinity for the substrate, and an overlayer having a high affinity for toner, wherein the underlayer and the overlayer have high affinity for each other (see page 2, lines 20-22 and page 3, lines 10-12 of Appellant's application as filed); wherein the underlayer is applied directly to the substrate and contains amine terminated polyamide (see page 3, lines 25-27; page 6, lines 31-32; and page 7, lines 1-7 of Appellant's application as filed); and wherein the overlayer is applied directly to the underlayer and comprises a polymer material defining an outer surface to which the toner image can be fused and fixed (see page 3, lines 28-29 of Appellant's application as filed).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Appellants request review of the following grounds of rejection on appeal:

- 1) Whether claims 38, 40, 42, 43, 45, and 47 are unpatentable under 35 U.S.C. § 102(b) as being anticipated by Bodager, et al. (U.S. Patent No. 5,565,301, referred to herein as "Bodager").
- 2) Whether claims 38, 40, 41, 43, 45, and 46 are unpatentable under 35 U.S.C. § 103(a) as being unpatentable over Fujimura, et al. (U.S. Patent No. 5,250,990, referred to herein as "Fujimura") in view of Graham, et al. (U.S. Patent No. 4,602,058, referred to herein as "Graham").

## VII. ARGUMENTS

The arguments presented hereinbelow address the rejection(s) stated in the Final Office Action dated November 16, 2009. It is submitted, however, that the absence of a reply to a specific rejection, issue or comment in the Final Office Action does not signify agreement with or concession of that rejection, issue or comment. Finally, nothing in the following arguments of this appeal brief should be construed as an intent to concede any issue with regard to any claim, except as specifically stated below.

### A. Rejection of claims 38, 40, 42, 43, 45, and 47 under 35 U.S.C. § 102(b) in view of Bodager

In the Final Office Action dated November 16, 2009, claims 38, 40, 42, 43, 45, and 47 are rejected under 35 U.S.C. § 102(b) as being anticipated by the Bodager reference. More specifically, the Examiner asserts that Bodager discloses all of the elements of independent claims 38 and 43.

At the outset, “[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference” (*Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)). For the reasoning stated hereinbelow, Appellants submit that Bodager *fails* to disclose all of the elements of, and thus *fails* to anticipate independent claims 38 and 43, and those claims depending therefrom.

Independent claims 38 and 43 are directed to a coated paper substrate and a paper-based print media, respectively. The coated paper substrate and the paper-based print media defined in such claims include, in part, a **paper** substrate.

Bodager discloses a photosensitive element including a carrier support, a carrier surface layer, an adhesive layer, and a photosensitive layer (see column 4, lines 46-49). The carrier support is formed from a material that has sufficient stiffness and dimensional stability to support an image without shifting and misaligning (see column 4, lines 55-57). Examples of suitable materials for the carrier support are provided at

column 4, lines 61-67 of Bodager, including a paper substrate *that has been treated to be water resistant.*

Appellant submits that a paper substrate treated to be water resistant is no longer considered to be a paper substrate (as recited in claims 38 and 43); but rather a *treated* paper substrate. Appellant further submits that a skilled artisan would know that imparting water resistance to paper chemically converts the paper into a plastic-like material. Accordingly, it is submitted that the substrate disclosed in Bodager is clearly *not* a paper substrate and, thus, does *not* read on Appellant's claims 38 and 43.

However, in the Final Office Action dated November 16, 2009, the Examiner argues that Bodager does not disclose that the paper substrate has been treated to be water resistant; but rather the *synthetic paper* has been treated to be water resistant. It appears that the Examiner bases his argument on column 4, lines 65-67 of Bodager, which states that "[t]he carrier support can also be a thin metal sheet or a paper substrate or synthetic paper that has been treated to be water resistant."

Appellant submits that the Examiner is misreading the foregoing recitation from the Bodager reference. Such recitation should actually be read as i) a thin metal sheet that has been treated to be water resistant, ii) a paper substrate that has been treated to be water resistant, or iii) synthetic paper that has been treated to be water resistant. Such is true, at least in part, because Bodager also explicitly discloses that the carrier support is water resistant to aqueous liquid development (column 2, lines 44-45). Bodager further discloses that "[t]he material used for the carrier support also should be sufficiently water resistant to allow for aqueous development of the photosensitive layer without warping or shrinking" (column 4, lines 57-60). Thus, Bodager teaches that any of the thin metal sheet, the paper, or the synthetic paper is treated to be water resistant.

For the reasoning stated above, Appellant submits that Bodager does in fact disclose that the carrier support can be a paper substrate that has been treated to be water resistant, and such support is therefore *not* a paper substrate alone. It is therefore submitted that Bodager clearly does *not* disclose all of the elements of

independent claims 38 and 43, and thus *fails* to anticipate such claims and those claims depending therefrom, under 35 U.S.C. § 102(b).

**B. Rejection of claims 38, 40, 41, 45, and 46 under 35 U.S.C. § 103(a) in view of Fujimura and Graham**

In the Final Office Action dated November 16, 2009, claims 38, 40, 41, 43, 45, and 46 are rejected under 35 U.S.C. § 103(a) as being obvious in view of the Fujimura and Graham references. More specifically, the Examiner asserts that Fujimura discloses all of the elements of independent claims 38 and 43, except that the polyamide layer is an amine terminated polyamide. The Examiner relies on Graham to supply the foregoing deficiency of Fujimura, and concludes that the combination of such references renders obvious claims 38 and 43, and those claims depending therefrom.

At the outset, obviousness is a question of law based on i) the scope and content of the prior art, ii) ***the differences between the prior art and the claims at issue***, iii) the level of ordinary skill in the art, and iv) objective evidence of non-obviousness (*Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966)). An invention may be obvious if it merely combines "familiar elements according to known methods [to] yield predictable results" (*KSR Int. Co. v. Teleflex Inc, et al.*, 127 S. Ct. 1727; 167 L.Ed.2d 705; 2007 U.S. LEXIS 4745; 75 U.S.L.W. 4289; 82 USPQ2d 1385 (2007)).

A basic requirement to establish a case that a claim is *prima facie* obvious is that "***the prior art reference (or references when combined) must teach or suggest all the claim limitations***" (emphasis added; see MPEP § 2143). "In proceeding before the Patent and Trademark Office, the Examiner bears the burden of establishing a *prima facie* case of obviousness based upon the prior art" (*In re Fritch*, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992)). "If examination at the initial stage does not produce a *prima facie* case of unpatentability, then without more the applicant is entitled to grant of the patent" (*In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992)).

In light of the foregoing precedent, Appellant respectfully submits that the combination of the Fujimura and Graham references *fails* to disclose all of the elements of independent claims 38 and 43, and thus *fails* to render such claims obvious.

To reiterate from above, the coated paper substrate and the paper-based print media defined in independent claims 38 and 43, respectively, includes a *paper* substrate.

Fujimura discloses an organic photoconductive member for an **electrophotographic** printing apparatus. The photoconductive member includes a photosensitive layer having a charge transportation layer laminated to a charge generation layer, which is supported on an **electroconductive substrate**. An example of such a substrate includes paper impregnated with electroconductive particles or plastics comprising electroconductive polymers. (See column 8, lines 3-6; column 8, lines 24-26; and the abstract of Fujimura.)

Appellant submits that an electroconductive substrate is *not* the same as a paper substrate (as recited in claims 38 and 43). The Examiner argues, however, that since claims 38 and 43 do not exclude the paper substrate from being impregnated with additional materials, Fujimura therefore meets the "paper substrate" limitation of the claims. Appellant respectfully disagrees with the Examiner's argument, and submits that the Examiner is interpreting such recitation too broadly. Appellant reminds the Examiner that "claims must be 'given their broadest interpretation consistent with the specification'" (see MPEP § 2111 citing *Phillips v. AWH Corp.*, 415 F.3d 1303, 75 USPQ2d 1321 (Fed. Cir. 2005)). The paragraph at page 3, lines 7-13 of Appellant's application as filed sets forth the paper substrate of the embodiment of Appellant's disclosure defined by claims 38 and 43. Such embodiment includes paper as the substrate. Appellant submits that such disclosure does *not* state, suggest, or otherwise imply that the paper may include or be impregnated with one or more other materials, such as electroconductive materials. Thus, claims 38 and 43 should not be interpreted so that the paper may include or be impregnated with other materials.

Further, the coated paper substrate and the paper-based print media defined in independent claims 38 and 43 further includes an underlayer coating, applied directly to the substrate, where the underlayer coating contains amine terminated polyamide. As admitted by the Examiner in the Final Office Action dated November 16, 2009, Fujimura does *not* disclose an underlayer coating including amine terminated polyamide (as also recited in Appellant's claims 38 and 43). As stated above, the Examiner turns to the Graham reference to supply such deficiency of Fujimura.

Graham discloses a ***blend or mixture*** of a polyamide and a carboxyl-containing ethylene polymer (see abstract of Graham). The blend may, for example, be coated on paper (see column 11, lines 46-48). More specifically, the polyamides (which may be amine-terminated (column 4, lines 39-40)) and ethylene copolymers contain carboxyl groups that form compatible, homogenous ***blends*** that are thermally stable for extended periods of time (column 3, lines 48-59). Appellant submits, however, that the underlayer coating as defined in claims 38 and 43 contains an amine terminated polyamide; and not a polyamide blend.

In the Final Office Action dated November 16, 2009, the Examiner points out that claims 38 and 43 state that the coated paper substrate or the paper-based print media, respectively, comprises the underlayer coating. The Examiner argues that such open-ended language implies that the additional material of the polyamide layer would not be excluded. Appellant strongly disagrees with the Examiner, and submits that although the preamble of claims 38 and 43 recite the term "comprising," such term implies that additional *layers* may be included in the coated paper substrate (claim 38) or the paper-based print media (claim 43); not that the underlayer includes additional materials besides amine terminated polyamide.

Furthermore, Appellant's specification states that the underlayer coating may be ***selected from the group consisting of*** amine terminated polyamide, a silane coupling agent, ***and*** amino propyl triethoxy silane. It is submitted that such disclosure does not state that combinations, mixtures, or blends of any of such materials may also be used in the underlayer coating. Thus, interpreting Appellant's claimed underlayer coating as

including a blend of amine terminated polyamide would be inconsistent with Appellant's specification (see again MPEP § 2111), and such interpretation would be too broad.

Additionally, to establish a *prima facie* of obviousness, the Examiner must show that there is some teaching, suggestion, or motivation to combine or modify the teachings of the prior art (*In re Kahn*, 441 F.3d 977, 986, 78 USPQ2d 1329, 1335 (Fed. Cir. 2006)). To reiterate from above, Fujimura discloses an **electrophotographic** printing apparatus including an organic photoconductive member having a coated **electroconductive** substrate. Graham, on the other hand, discloses a polyamide and ethylene copolymer blend that may be coated, for example, on **paper**. Graham does *not* disclose that the blend is or may be conductive and/or may be used as a coating layer in an organic photoconductive member. Without such conductivity, it is submitted that a polymer blend (such as the one disclosed in Graham) would not work as a suitable electron generating layer for the organic photoconductive member of Fujimura. Thus, one skilled in the art would *not* turn to the teachings of the Graham reference to supply the deficiencies of Fujimura.

For all of the reasons stated above, it is submitted that the Examiner has *failed* to establish a *prima facie* case of obviousness, and thus claims 38, 40, 41, 43, 45, and 46 are not obvious under 35 U.S.C. § 103(a).

VIII. CONCLUSION

The Appellant respectfully submit that claims 38, 40-43, and 45-47 as currently pending fully satisfy the requirements of 35 U.S.C. §§ 102, 103 and 112. Accordingly, Appellant respectfully requests that the Board of Patent Appeals and Interferences find for the Appellant and reverse the rejection of each of Appellant's claims 38, 40, 42, 43, 45, and 47 under 35 U.S.C. § 102(b) as being anticipated by Bodager, and claims 38, 40, 41, 43, 45, and 46 under 35 U.S.C. § 103(a) as being obvious over Fujimura and Graham. In view of the foregoing, favorable consideration and passage to issue of the present application is respectfully requested.

Respectfully submitted,

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IX. CLAIMS APPENDIX

38. (Previously presented) A coated paper substrate configured for printing a toner image thereon, comprising:

a paper substrate;

an underlayer coating, applied directly on the substrate, wherein the underlayer coating contains amine terminated polyamide; and

an overlayer coating, applied directly on the underlayer coating, comprising a polymer material to which the toner image can be fused and fixed.

40. (Previously presented) The coated substrate according to claim 38 wherein the overlayer coating is free of particulate matter.

41. (Previously presented) The coated substrate according to claim 38 wherein the polymer material comprises styrene butadiene copolymer.

42. (Previously presented) The coated substrate according to claim 38 wherein the polymer material comprises ethylene acrylic acid copolymer.

43. (Previously presented) A paper-based print media for printing a toner image thereon, comprising:

a paper substrate coated with an underlayer having a high affinity for the substrate, and an overlayer having a high affinity for toner, wherein the underlayer and the overlayer have high affinity for each other;

wherein the underlayer is applied directly to the substrate and contains amine terminated polyamide; and

wherein the overlayer is applied directly to the underlayer and comprises a polymer material defining an outer surface to which the toner image can be fused and fixed.

45. (Previously presented) The print media according to claim 43 wherein the underlayer is free of particulate matter.

46. (Previously presented) The print media according to claim 43 wherein the overlayer comprises styrene butadiene copolymer.

47. (Previously presented) The print media according to claim 43 wherein the overlayer comprises ethylene acrylic acid copolymer.

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X. EVIDENCE APPENDIX

None.

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XI. RELATED PROCEEDINGS APPENDIX

None.